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ENGLISH SUMMARY

OWN LIFESAVIOR IN EMERGENCIES: ON SELF-RELIANCE[1] OF CITIZENS IN THE EVENT OF PHYSICAL DANGER

Chapter 1. Introduction

In today's society, the active citizen is in the center of attention. The government sees this as having the potential to close the 'gap' with citizens, but also citizens want to have more influence as a result of a diminishing political representation (Boutellier, 2011a). This book is about active citizenship in emergency situations of a physical nature. Think of calamities, disasters and crises. This form of self-reliance refers to everything that citizens do for the safety of themselves and others before, during and after emergency situations (Hijlkema et al., 2013). Based on literature I distinguish four perspectives on self-reliance. This is self-reliance as a substitute for government action (citizens organize safety themselves), self-reliance as forgotten value (the government organizes safety itself), self-reliance as an institutionalized surplus (the government organizes self-reliance in an institutional way, as a supplement to its own actions), and self-reliance as an uncontrolled surplus (the government considers self-reliance as an important supplement to its own actions, but does not directly control it). This latter perspective is, in my opinion, the contemporary perspective. This study takes place against the background of the society

1 There is no good English equivalent of the Dutch word 'zelfredzaamheid'. In my opinion, the English term 'self-reliance' comes closest to the Dutch interpretation in the context of disasters and crises. The English dictionary translates this as 'the quality of not needing help or support from other people'.

that Boutellier (2011a) characterizes as an improvisation society. In essence, this means that the social order develops from the dynamics of social relationships in a permanent process of mutual coordination. In the final chapter of this book I relate the results of this study to the notion of this improvisation.

Citizens are often more or less self-reliant in emergency situations (Quarantelli, 1993; Perry & Lindell, 2003; Dynes, 1990), but not everyone, not always and not everywhere. It is not clear why this is the case, because this phenomenon has been investigated only to a limited extent in the Dutch context. In relation to this point I provide my scientific contribution through two potentially explanatory dimensions. The first is the individual dimension, that is about the influence of risk perception, responsibility and knowledge of action perspectives (Lindell & Perry, 2004; 2012; Mulilis et al., 2000; Tierney et al., 2001). In addition to the individual dimension, I also consider the social dimension to be important, because self-reliance arises in social interaction with others. This is about the influence of social cohesion, social capital, institutional trust and interpersonal trust (Rousseau et al., 1998; Schuyt & Verhoeven, 2003; Kearns & Forrest, 2000; Forrest & Kearns, 2001; Lin, 1999; 2001). Governments and civil society organizations want to promote self-reliance, but have to operate on the basis of poor knowledge of the issue. It seems that the government ignores the social perspective in policy (Kolen et al., 2012). This study therefore also focuses on the policy of self-reliance and deals with the policy implications of the insights. Finally, this research also makes a methodological contribution due to its pioneering nature.

A number of main choices were made in the study: (1) most data were collected within the municipalities of Zwolle and Olst-Wijhe; (2) self-reliance has been investigated in the emergency situations of fire, high water/flood and extreme winter weather; (3) both qualitative and quantitative methods have been used; (4) the research factors are not isolated, but examined together; (5) self-reliance is considered to be a total concept of citizens who act before, during and after emergencies; and finally (6) subjective self-reliance has been investigated.

The main question of this study is: *'Which factors influence the perception of self-reliance in emergency situations and what consequences does this have for policy?'* This central question is divided into four sub-questions:

1. Which individual factors influence the self-reliance perception?
2. Which social factors influence the self-reliance perception?
3. How do the findings relate to current safety policy?
4. What future prospects result from this for improving safety policy?

PART 1 – FUNCTIONS OF SELF-RELIANCE

Chapter 2. The meaning and context of self-reliance

The concept of self-reliance is primarily a Dutch concept. It is about the degree to which citizens are independent in relation to themselves, others and society. Self-reliance can relate to individual and collective level and to all kinds of social domains, such as health, well-being and safety. This book focuses on the self-reliance of civilians in emergency situations of a physical nature and also pays attention to other concepts, such as resilience, civic courage, perceived control and self-effectiveness (e.g. Helsloot & Van 't Padje, 2010; Gunther Moor & Van der Vijver, 2011; Norris et al., 2008; Wallston et al., 1987; Bandura, 1994). Self-reliance, as is understood in this study, is unique in relation to these related concepts. There may be perceived self-reliance or actual self-reliance. It is possible that the first form says something about the second form (e.g. Benight & Harper, 2002), but there are also studies that find differences (e.g. Ablah et al., 2009).

Self-reliance in emergency situations has two sides. On the one hand, it contributes to the prevention of emergencies and limits the negative consequences when they do occur. Examples of this are people who hung up a smoke detector themselves, that warned them during a fire (Ahrens, 2008), civilians who help search for missing persons (Jong et al., 2013) or providing first aid (Groenewegen-ter Morsche & Oberijé, 2010). Unfortunately, self-reliance also has another side (SMVP, 2010). Sometimes people overlook dangers when they come to the rescue of others. A consequence of this is that they become victims themselves. It may also be that people unintentionally harm others or disrupt the counseling process. Self-reliance can also turn into forms of unwanted self-direction (Van Duin & Wijkhuijs, 2014) or can have legal consequences (Hol, 2010).

The self-reliance of Dutch citizens seems ambivalent, although scientific research into this has been conducted to a very limited extent. The impression is that few Dutch people are actively preparing for risks which they think will not occur (e.g. Terpstra, 2009). This has to do with perceptions of risk, responsibility and action perspectives. During emergencies, Dutch citizens often prove self-reliant, for example during the Polder Crash in 2009 (Scholtens & Groenendaal, 2011a; 2011b). On the other hand, it is also clear that there are citizens to whom this does not apply. This so-called reduced self-reliance concerns an estimated 20% of the Dutch population (Bakker et al., 2018). Finally, there are examples in which citizens are self-reliant and actively contribute to the

recovery phase after an emergency (e.g. Groenewegen-ter Morsche & Oberijé, 2010), but scientific documentation is again lacking on this point.

Chapter 3. Self-reliance and the individual perspective

From an individual perspective, the theory provides starting points for linking risk perception, knowledge of action perspectives and personal responsibility with self-reliance in emergencies. Risk perception is about the estimated chance, the estimated consequences and the perceived fear that someone has for a risk (e.g. Miceli et al., 2008). Most studies indicate that a higher risk perception leads to a better preparation by citizens and that they respond differently to emergency situations (e.g. Lindell & Perry, 2012). However, effects are ambiguous (Wachinger et al., 2013). In this study a positive effect is expected and tests the following hypothesis: people with a higher risk perception experience a lower self-reliance perception (*H1*).

Knowledge of action perspectives is about the extent to which citizens know what they can do themselves before, during and after emergency situations. In general, researchers assume that this knowledge leads to reduced risky behavior (e.g. Griffin & Neal, 2000) and more self-reliance before, during and after emergency situations (e.g. Doll et al., 2007; Lindell & Perry, 2012; Warda et al., 1999; Latané & Darley, 1968; Mayunga, 2007). This study therefore tests the following hypothesis: people with a higher perception of knowledge of action perspectives experience a higher self-reliance perception (*H2*).

The Dutch government pursues a shared responsibility in the field of safety between the government and citizens (Van Noije, 2012). This mainly concerns moral responsibility, because the government does not formally transfer any tasks to civilians. Most research shows that a greater sense of responsibility for safety also leads to more self-reliance (e.g. Mulilis & Duval, 1995; Latané & Darley, 1968; Pfefferbaum et al., 2007). This relationship is tested with the following hypothesis: people with more responsibility perception of their own safety experience a higher self-reliance perception (*H3*).

Chapter 4. Self-reliance and the social perspective

Approaching self-reliance only from an individualistic perspective does not do justice to the social context in which it manifests itself. Citizens are self-reliant in relation to others and are also regularly dependent on it. The social perspective is therefore the next building block of the theory. Based on the literature, four relevant factors can be distinguished. These are social cohesion, social capital, interpersonal trust and institutional trust. Social cohesion is about the bonding, involvement and solidarity of people with a social or political system

(e.g. De Hart, 2002). This may, for example, encourage people to prepare for emergencies and help each other (e.g. Becker et al., 2013; Drabek, 1968), but social norms may also stand in the way of self-reliance (e.g. MacDougall et al., 2014). This study assumes a positive effect, in which the following hypothesis is tested: people who experience more social cohesion experience a higher self-reliance perception (*H4*).

Social capital refers to resources available to a person based on his social network (e.g. Lin, 2001). In the event of an emergency, resources are, for example, knowledge of preparatory measures, physical assistance during calamities or providing shelter. Most researchers point to the positive effects of social capital (e.g. Levac et al., 2012), but others point to inequality differences due to an unfair distribution of resources (e.g. Aldrich, 2012) or ambiguous research results (Meyer, 2018). This study assumes a positive effect, in which the following hypothesis is tested: people who experience more social capital experience a higher self-reliance perception (*H5*).

Trust means that one starts from the positive intentions or behavior of another, and accepts the associated vulnerability (Rousseau et al., 1998). Trust may arise when there is a risk and one depends on the other (e.g. Nooteboom & Six, 2003), is context-dependent (e.g. Hardin, 1993), and can appeal to competencies and intentions (e.g. Nooteboom, 2002). Interpersonal trust is about trust between people and institutional trust is about trust between people and institutions (e.g. Six, 2004). Both of these forms may be relevant to self-reliance. Trust is inextricably linked to theories about social capital (e.g. Putnam, 2000). Previous studies have shown that interpersonal trust promotes citizens' preparation (e.g. Reininger et al., 2013) and to help each other after emergencies (e.g. Aldrich, 2011). Institutional trust is relevant for self-reliance, as it contributes to the willingness of citizens to adopt opinions from the authorities (e.g. Joshi & Aoki, 2013). Positive effects on self-reliance are expected for both interpersonal trust and institutional trust. The formulated hypotheses are: people who experience more interpersonal trust, experience a higher self-reliance perception (*H6*), and people who experience more institutional trust experience a higher self-reliance perception (*H7*).

PART 2 – FIELD RESEARCH

Chapter 5. Research design

The majority of Dutch self-reliance research is qualitative. This research mainly uses quantitative methods, but supplements them with qualitative methods. As a result, this research can be considered as 'mixed methods research', which has the great advantage that the disadvantages of different methods are solved (Johnson & Onwuegbuzie, 2004). Data were collected at one point in time in the municipalities of Zwolle and Olst-Wijhe. On the one hand for substantive reasons and on the other because these municipalities wanted to facilitate research partly because of policy priorities. Self-reliance has been investigated in relation to fire, high water/flood and extreme winter weather. These emergencies could occur objectively in the research area, were conceivable for respondents, and had the opportunity for citizens to be self-reliant. A non-representative sample was drawn from citizens of Zwolle and Olst-Wijhe with a digital questionnaire, which resulted in 2,454 respondents. For this purpose, a preliminary study was conducted with a semi-structured questionnaire among professionals from different safety regions ($N = 51$) and representatives of village councils who had a lot of experience with high water and floods ($N = 3$). For extra clarity and understanding, the results were discussed in three focus groups with professionals from safety regions and other organizations (total $N = 21$). Finally, policy plans and vision documents from safety regions were also studied to form an idea of the policy pursued. Various statistical analyses have been performed in the development of scales and in testing the hypotheses.

Chapter 6. The model of self-reliance

The results of the questionnaire have been transformed into values between 0 and 100. The higher the score, the more the respondent perceives the measured factor. The scores are divided into the following categories: 0-25: very low; 26-50: low; 51-75: reasonable; 76-100: high. Various descriptive statistics are discussed in the chapter. Respondents, for example, perceive self-reliance significantly the highest in the event of fire ($M = 78$), followed by extreme winter weather ($M = 75$) and high water/flooding ($M = 57$). Another result is that the majority of respondents perceive self-reliance in the event of fire and extreme winter weather as reasonable to high (97% and 92% respectively). In the case of high water, this is less (60%). Respondents perceive most individual and social factors as reasonable to high.

The chapter follows a presentation of the results of different regression models. There are three per emergency situation: model 1 with control variables, model 2 with individual factors added, and model 3 with social factors added. This shows that the individual factors influence self-reliance perception, whereby this applies to risk perception in two of the three emergency situations (not in extreme winter weather). Of the social factors, interpersonal trust is always of influence and institutional trust in two of the three emergency situations (not in the event of high water/flooding). Social capital and social cohesion do not appear to influence self-reliance perception. Given the theory, it is likely that these factors are in some way related to self-reliance. That is why an alternative model has been tested for each emergency situation, in which social capital and social cohesion are independent variables of interpersonal trust. The influence of both variables turned out to be significant in all emergency situations. The models were then assigned to focus groups with professionals. They recognize the relevance of the factors in their practices and support the association with self-reliance. Professionals mention as important policy implications that the results can serve as a guideline for policy, which until now is mainly based on practical insights. In addition, they point out that current policy is primarily aimed at the individual, while the results show that the social perspective is also relevant.

Finally, the hypotheses are discussed in the chapter. The results are as follows: (*H1*) risk perception: partially confirmed; (*H2*) knowledge of action perspectives: confirmed; (*H3*) personal responsibility: confirmed; (*H4*) social cohesion: not confirmed; (*H5*) social capital: not confirmed; (*H6*) interpersonal trust: confirmed; (*H7*) institutional trust: partially confirmed.

PART 3 – DISCUSSION AND CONCLUSION

Chapter 7. The essence of self-reliance

Respondents perceive their self-reliance in the event of high water/flooding the lowest. This difference is greatest in the preparation phase. This may be due to a low risk perception, because people think that no effective preparatory measures can be taken, or due to the lack of resources (money, knowledge, etc.) that are required for this (Terpstra, 2009). Furthermore, respondents perceive the investigated emergency situations as reasonable or low. Differences in risk perception can arise from psychological, social, cultural, and political factors

(Slovic, 2000). Respondents perceive their responsibility as the lowest in the event of high water/flooding, somewhat higher in extreme winter weather and highest in the event of fire. These differences may have to do with the extent to which people see opportunities to take action themselves (Terpstra, 2009). Respondents appear to have reasonable knowledge of action perspectives or know where they can find this information. This could be explained by the fact that nowadays information about what to do before, during and after emergencies can easily be found online. It's also possible that people develop the necessary skills in other ways. Respondents also have a reasonable amount of social capital. It remains to be seen whether citizens actually use this (Van der Gaag, 2005), but it is certainly conceivable in the event of an emergency which empirical data support (e.g. Groenewegen-ter Morsche & Oberijé, 2010; Tierney, 2009). Finally, respondents appear to have reasonable confidence in others and in the government when it comes to providing assistance with self-reliance. This trust is slightly higher than social and institutional trust in general (Schmeets, 2018).

Not all hypotheses are supported by the results. Two methodological explanations are conceivable for this. The first explanation is that the hypotheses are based on theories about actual self-reliance, while self-reliance has been subjectively operationalized in this study. The second explanation is that findings from studies on self-reliance are limited to generalization, so that the theory based on this also has its limitations. In addition, there are also substantive explanations for each hypothesis. The risk perception (*H1*) affected two of the three emergency situations. If risk perception does not lead to action, this may be because people have accepted the risk, think that others are doing something about it, or because they have not enough resources or knowledge (Wachinger et al., 2013). Knowledge of action perspectives (*H2*) and own perception of responsibility (*H3*) were influential and in line with earlier research. Social cohesion did not influence as expected (*H4*). This may be because social cohesion does not mean enough for people to actually feel more self-reliant because of their environment. It may also be because in this study the general social cohesion was measured and no specific translation was made to the context of self-reliance. Social cohesion proved to have a positive effect on interpersonal trust, which fits in with earlier studies. Social capital also had no influence as expected (*H5*). This may be because the presence of social capital does not mean that people can actually use it (e.g. Van der Gaag, 2005). Social capital did have a positive effect on interpersonal trust. Interpersonal trust (*H6*) affected all cases. Knowing that someone else can and wants to help you in emergency situations promotes self-reliance. Institutional trust

(*H7*) affected two of the three emergency situations. This effect did not occur with high water/flooding. It is not clear what causes this difference.

The first part of the main question is answered in the chapter: *'Which factors, individually and socially, influence the perception of self-reliance in emergencies?'* The conclusion is that knowledge of action perspectives and personal responsibility of all individual factors influenced all emergency situations. For risk perception, this was in two of the three emergency situations. The effect of knowledge of action perspectives is the strongest. From the social factors, the conclusion is that interpersonal trust had the strongest direct effect in all emergencies. Social capital and social cohesion reinforced this trust. Institutional trust had an impact in two of the three emergency situations, but less so than interpersonal trust.

The strength of this research is that taken into account the contextual nature of the concepts studied, that the individual and social perspective have been examined in conjunction, that the citizen's perspective has been supplemented with that of professionals, and that both quantitative and qualitative methods have been applied. The limitations are that it is not the actual but the experienced self-reliance that has been investigated, that the number of three emergency situations investigated and three focus groups is limited, that many new measuring scales have been applied with sufficient, but sometimes low reliability, and that the research design could not establish causal relationships. The research has various implications for research methods. In the field of methods, it is mainly about good ways of being able to measure self-reliance, just like the other concepts involved in this study. This research is one of the first attempts in which self-reliance has been quantitatively investigated in the present way, as a result of which many new scales have been developed. The suggestions for further research are to further validate the new scales and improve reliability, to investigate which other factors influence self-reliance, to look at the similarities and differences between actual and experienced self-reliance, and to generate more knowledge to shape self-reliance policies.

Chapter 8. Policy and improvisation

Self-reliance is a strategic policy priority of safety regions (e.g. Veiligheidsberaad, 2014; 2016). However, little is known about policy starting points to influence self-reliance. Policy is often based on practical assumptions and focused on the individual dimension. At the moment, self-reliance is primarily seen from the perspective of uncontrolled surplus: the government considers self-reliance important, but does not manage it directly. This research shows that both the individual and social dimensions are important, but that the

government focuses on the individual dimension only, and that many citizens (but not every citizen) are self-reliant. It is important that the factors of the individual and social dimension interact and reinforce each other. I consider the current perspective on self-reliance to be insufficient to utilize this interaction in all its potential. A new perspective is needed and can be found in the notion of the improvisation society. Self-reliance as a form of improvisation presupposes organization and coordination between all relevant actors. Self-reliance is about improvisation, but from a certain systematic nature and processes of organization. In this way self-reliance comes loose from the negative connotation of 'find out for yourself', recognizes the added value of citizens, considers active citizenship not as a panacea (see also Boutellier, 2011a), and takes into account the (im)possibilities that every citizen has.

The first policy opportunity is therefore to regard self-reliance no longer as an uncontrolled surplus, but as a form of improvisation. The second policy opportunity is to broaden current policy and to include the social perspective. Trust between citizens and between citizens and the government, social ties and social resources are important. This provides a great opportunity to broaden the current self-reliance policy, to increase its impact, and opens the doors to new and other policy initiatives, that are better aligned with the social perspective. The third policy opportunity is that more insight into self-reliance and reduced self-reliance can be obtained, because a measurement instrument for self-reliance perception has been developed in this study.

In chapter 7 it became clear which individual and social factors influence self-reliance. In this chapter the second part of the main question is answered: *'What consequences does this have for policy?'* The conclusion is that current self-reliance policies lack the foundation to be fully and systematically effective. This research gives cause for and offers the possibility to make better use of the potential of self-reliance policy: developing policy aimed at creating improvisation of processes and actors that play a role in self-reliance, incorporating the social perspective systematically, and measuring self-reliance in communities.

This research shows that self-reliance can be explained by both the individual and the social dimensions. Citizens are often self-reliant alone, but more self-reliant together. Self-reliance requires improvisation from citizens, governments and organizations. Good improvisation therefore requires social organization. Perhaps this insight is the key to a self-reliant society, taking into account the diversity of self-reliance that lies within it.